ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

DRAFT Applicable or Relevant And Appropriate Requirements Technical Memorandum

Rocky Flats Environmental Technology Site 10808 Highway 93 Golden, CO 80403-8200

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ARARS Technical Memorandum PREDECISIONAL REVIEW DRAFT FOR INTERAGENCY DISCUSSIONS

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ARARs

Technical Memorandum

PREDECISIONAL REVIEW DRAFT FOR INTERAGENCY DISCUSSIONS

ACRONYMS AND ABBREVIATIONS

ARARs Applicable or Relevant and Appropriate Requirements

CAD Corrective Action Decision
CCR Colorado Code of Regulations

CDPHE Colorado Department of Public Health and Environment

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CFR Code of Federal Regulations
CRS Colorado Revised Statute
DOE U.S. Department of Energy

EPA U.S. Environmental Protection Agency

FS Feasibility Study

IHSS Individual Hazardous Substance Site RFCA Rocky Flats Cleanup Agreement

RFETS Rocky Flats Environmental Technology Site

RI Remedial Investigation
ROD Record of Decision
TBC To-Be-Considered
TM Technical Memorandum
USC United States Code

1 INTRODUCTION

This Technical Memorandum (TM) identifies chemical-, location-and action-specific applicable or relevant and appropriate requirements (ARARs) and has been prepared pursuant to Task 1 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Remedial Investigations/Feasibility Study (RI/FS) Report Work Plan (Department of Energy [DOE] 2002) and the Rocky Flats Cleanup Agreement (RFCA). Upon approval of this TM by the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE), the list of ARARs will be used in developing the draft RI/FS Report and ultimately the final Corrective Action Decision/Record of Decision (CAD/ROD) for the Rocky Flats Environmental Technology Site (RFETS).

The RI gathers information about contaminants at RFETS in relation to the ARARs in order to develop and evaluate effective remedial alternatives in the FS. The FS evaluation provides an analysis of how feasible it is for the remedial alternatives to meet these ARARs in relation to the nine CERCLA criteria (40 Code of Federal Regulations [CFR] 300.430(e)(9)(iii)). Final ARARs to be addressed and accomplished by the final remedy are determined when the remedy is selected in the CAD/ROD.

2 BACKGROUND

2.1 Definition of ARARs

Pursuant to CERCLA, a selected remedy for a site must comply with ARARs (40 CFR 300.430(f)(ii)(B)). *Applicable* requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental, or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. *Relevant and Appropriate* requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only State standards that are identified in a timely manner and are more stringent than Federal requirements qualify as ARARs.

In addition to ARARs, the lead and support agencies may, when appropriate, identify other non-promulgated advisories, criteria, guidance documents, or proposed regulations that are to-be-considered (TBCs) to supplement an ARAR provision for a particular release. TBCs are not legally binding, and do not have the status of potential ARARs. However, TBCs are used in determining the necessary level of cleanup for the protection of human health and the environment.

ARARs are identified as chemical-, location-, or action-specific. Chemical-specific requirements are usually health- or risk-based numerical values or are methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may be found in or discharged to the ambient environment.

Location-specific requirements are restrictions placed on the concentration of hazardous substances solely because they occur in special locations. Typical location restrictions include areas with sensitive or unique characteristics such as wetlands, areas of historical significance, or areas situated in locations requiring special precautions.

Action-specific requirements are usually technology- or activity-based requirements or limitations on actions taken with respect to management of the remediation waste or closure of the facility. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy.

2.2 Application to RFETS and RFCA

RFCA adopted an accelerated action approach to RFETS cleanup, as described in RFCA paragraph 79:

To expedite remedial work and maximize early risk reduction at the Site, the Parties intend to make extensive use of accelerated actions to remove, stabilize, and/or contain Individual Hazardous Substance Sites (IHSSs).

To assist project managers in identifying ARARs for specific RFETS accelerated actions, the RFCA parties developed a Master List of Potential ARARs and included this list in the Implementation Guidance Document (RFCA Appendix 3). This list is reviewed and updated, as necessary, on an annual basis. This list will continue to exist in its latest form in RFCA Appendix 3 and will be used for developing accelerated action decision documents. The ARARs identified in Table 1 of this TM is a list of ARARs that will be used in developing the draft RI/FS Report and incorporated ultimately into the final CAD/ROD. Once this TM is approved, the ARARs will only be changed if it is determined through the RFCA Annual Review process that the ARAR is no longer protective or there has been a significant change to the statute or regulations.

3 REFERENCES

DOE, 2002, Comprehensive Environmental Response, Compensation and Liability Act Remedial Investigation/Feasibility Study (RI/FS) Report Work Plan, Golden, Colorado, March 11, 2002.

APPENDIX 1

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

_	
	Comment
-	Type
	Citation
	Requirement

Comment	Every activity shall employ control measures and operating procedures that are technologically feasible and economically reasonable which reduce, prevent, and control fugitive particulate emissions (control plans, use of control equipment, watering, etc.).	An APEN shall be filed with the CDPHE prior to construction, modification or alteration of, or allowing emissions of air pollutants from any activity. Certain activities are exempted from APEN requirements per specific exemptions listed in the regulation. Construction permits are not required for CERCLA activities, however, substantive requirements that would normally be associated with construction permits will apply. Also, fuel-fired equipment (generators,
Type	<	U U
Citation	5 CCR 1001 [40 CFR 52, Subpart G] CAQCC Reg. No. 1 [5 CCR 1001-3] Section III.D III.D.2(b) III.D.2(c) III.D.2(f) III.D.2(f) III.D.2(h) III.D.2(h) III.D.2(h)	CAQCC Reg. No. 3 [5 CCR 1001-5] Part A, Section II Part B Part B
Requirement	CLEAN AIR ACT (CAA) [42 USC 7401 et. seq.] COLORADO AIR QUALITY CONTROL COMMISSION (CAQCC) REGULATIONS • Emission Control Regulations for Particulates, Smokes, Carbon Monoxide, and Sulfur Oxides -Fugitive Particulate Emissions -Construction Activities -Storage and Handling of Material -Haul Roads -Haul Trucks -Demolition Activities -Sandblasting Operations	 Air Pollutant Emission Notices (APEN), Construction Permits and Fees, Operating Permits, and Including the Prevention of Significant Deterioration APEN Requirements Construction Permits, Including Regulations for the Prevention of Significant Deterioration (PSD) Construction Permits

Applicable or Relevant and Appropriate Requirements

Comment		compressors, etc.) associated with these activities may require permitting.	Even though CERCLA activities are exempt from construction permit requirements, non-attainment area requirements may apply if emissions of certain pollutants exceed certain threshold limits. The requirements include emissions reductions or offsets, and strict	emission control requirements. Although RFETS is no longer in a non-attainment area, this requirement is retained to evaluate whether RFETS is still no longer in a non-attainment area in the future.	Even though CERCLA activities are exempt from construction permit requirements, PSD requirements may apply if emissions of certain pollutants exceed	certain threshold limits. The requirements include strict emission control requirements, source impact modeling, and pre-construction and post-construction monitoring.		This requirement applies to the transfer of organic liquids to a tank larger than 56 gallons (bottom fill or submerged fill must be utilized).	This requirement prohibits the disposal of VOCs by evaporation and spillage.	This requirement regulates storage and transfer of petroleum liquids.	
Type			A, C,		A, C, L			A	Ą		
Citation			Section IV.D.2		Section IV.D.3		CAQCC Reg. No. 7 [5 CCR 1001-9]	Section III.B	Section V	Section VI	
Requirement	CLEAN AIR ACT (CAA) [42 USC 7401 et. seq.]		-Non-attainment Area Requirements		-Prevention of Significant Deterioration Requirements		Emissions of Volatile Organic Compounds (VOCs)	- General Requirements for Storage and Transfer of VOCs	- Disposal of VOCs	- Storage and Transfer of Petroleum Liquid	

Comment				This section establishes a radionuclide emission standard equal to those emissions that yield an effective dose equivalent (EDE) of 10 mrem/year to any member of the public.	 This section establishes emission monitoring and testing protocols required to measure radionuclide emissions and calculate EDEs. This section also requires that radionuclide emissions measurements be made at all release points which have a potential to discharge radionuclides into the air which could cause an EDE to the most impacted member of the public in excess of 1% of the standard (0.1 millirem/ear). The perimeter samplers in the Radioactive Ambient Air Monitoring Program sampler network are utilized to verify compliance with the standard. Final monitoring locations for the final remedy will be identified during the RIFS process and included in the final CAD/ROD.
Type				C, L	 C, A
Citation			40 CFR 61, Subpart H	61.92	61.93
Requirement	CLEAN AIR ACT (CAA) [42 USC 7401 et. seq.]	NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS	National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	-Standard	-Emission Monitoring and Test Procedures

Comment
Type
Citation
Requirement

Comment		Surface water quality will be monitored and assessed as described in the Surface Water Remedial Action Objectives Technical Memorandum dated August 20, 2002.	The use classification for groundwater at RFETS is surface water protection. Surface water quality will be monitored and assessed as described in the Surface Water Remedial Action Objectives Technical Memorandum dated August 20, 2002 and the anticipated Groundwater Technical Memorandum.	This requirement would only apply where wetland disturbance mitigation is part of the final remedy.	
Type		U	U	A/L	A/L
Citation	rt [CWA])[33USC 1251 et.seq.]	5 CCR 1002-31	5 CCR 1002-41	33 USC 1344 33 CFR 323.3	10 CFR 1022 .11 .12 .13
Requirement	FEDERAL WATER POLLUTION CONTROL ACT (aka Clean Water Act [CWA])[33USC 1251 et.seq.]	COLORADO BASIC STANDARDS AND METHODOLOGIES FOR SURFACE WATER	COLORADO BASIC STANDARDS FOR GROUNDWATER	DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES • Discharges Requiring Permits	DOE COMPLIANCE WITH FLOODPLAIN/WETLANDS ENVIRONMENTAL REVIEW REQUIREMENTS • Floodplain/Wetlands Determination • Floodplain/Wetlands Assessment • Applicant Responsibilities

Comment	
Туре	
Citation	
Requirement	

Applicable or Relevant and Appropriate Requirements

Comment				Identify and minimize early in the planning stage of an action, any potential conflicts between the action and federally listed species.	This is the process DOE needs to follow to evaluate the potential effects of the action on listed and proposed species and designated and proposed critical habitat and determine whether any such species or habitat are likely to be adversely affected by the action and is used in determining whether formal consultation or a conference is necessary.
Type				AL	A/L
Citation				50 CFR 402.11	50 CFR 402.12
Requirement	NATURAL RESOURCE AND WILDLIFE PROTECTION LAWS	ENDANGERED SPECIES ACT (FSA) [16 HSC 1531 of sea]	The rate of the ra	EARLY CONSULTATION	BIOLOGICAL ASSESSMENT Purpose Preparation Requirements Request for Information Director's Response No Listed Species or Critical Habitat Present Listed Species or Critical Habitat Present Verification of Current Accuracy of Species List Contents Identical/Similar to Previous Action Permit Requirements Completion Time Submission of Biological Assessment Use of Biological Assessment

Requirement	Citation	Type	Common	1
NATURAL RESOURCE AND WILDLIFE PROTECTION LAWS			Comment	
INTERAGENCY COOPERATION	50 CFR 402	A/L	This is an optional process that includes all discussions	
Informal Consultation	.13		correspondence, etc. between the USFWS and the DOE. It is designed to assist in determining whether formal consultation or a conference is required. If during this	
Formal Consultation	.14		step, it is determined by the DOE with the written concurrence of the USFWS that the action is not likely to adversely affect listed species or critical backing the	
MIGRATORY BIRD TREATY (16 11SC 701 715)			is necessary. DOE shall review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat.	
TAKING, POSSESSION, TRANSPORTATION, SALE, PURCHASE, BARTER, EXPORTATION, AND IMPORTATION OF WILDLIFE AND PLANTS	50 CFR 10	A/L	Principally focuses on the taking and possession of birds protected under this regulation. Enforcement is predicated on location of the project and time of the	T
COLORADO NONGAME, ENDANGERED, OR THREATENED SPECIE	TENED SPECIES CONSERVATION ACT [CRS 33-1-115, 33-2-101 to 33-2-107]	ts 33-1-11	year. Actions will be planned and implemented to prevent or minimize contact with listed birds and nests. 5, 33-2-101 to 33-2-107]	
Compliance with the Colorado Nongame Wildlife, including Endangered Species	CRS 33-2-104 CRS 33-2-105	A/L	It is unlawful for any person to take, possess, transport, export, process, sell or offer for sale, or ship and for any	
			common contract carrier to knowingly transport or receive for shipment any species or subspecies of wildlife appearing on the list of wildlife indigenous to the State of Colorado determined to be endangered within the State.	



Comment			Differs from NHPA in that it encompasses a broader	scope of resources than those listed on the National	Register and requires only preservation of the data (including analysis and publication).
Type			1		
Citation			16 USC 469a-1(a)	16 USC 469a-1(b)	
Requirement	NATIONAL TENEDOSTINOSTINOS STATES AND STATES	NATURAL RESOURCE AND WILDLIFE PROTECTION LAWS	Notification and Request for Preservation of Data	Survey of Sites; Preservation of Data; Compensation	

Comment
Type
Citation
Requirement

Comment				Planned implementation of Site approved procedures to meet 10 CFR 835, "Occupational Radiation Protection" and the Site's Integrated Work Control Program (IWCP) process will be described for remedial alternatives in the	The requirements for a final radiation in the CAD/ROD. The requirements for a final radiation survey will be met through implementation of the Sampling and Analysis	The description will be provided in the FS, and ultimately in the CAD/ROD for the final action.	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action. The description will be provided in the FS, and ultimately in the CAD/ROD for the final action. The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	
Type				Ą	A/L	A/L	A/L A/L	
Citation	25 11 104)	72-11-104)	6 CCR 1007-1,	RH 3.16.4.3.3	RH 3.16.4.3.4	RH 3.16.4.3.6	RH 3.16.4.3.7.2 RH 3.16.4.3.7.3	
Requirement	RADIATION CONTROL (CRS & 8 25-1-107(1)(s) and (1)(4) 25-1-108 and 15-11-104)	DIE (0)(1), 43-1-100, and (1)(1), 43-1-100, and (1)(1)(1), 43-1-100, and (1)(1)(1), 43-1-100, and (1)(1)(1), 43-1-100, and (1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(CULUKADU DIVISION OF LABORATORY AND RADIATION SERVICES	Decontruitssioning Flan Contents – must include a description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning.	Decommissioning Plan Contents – must include a description of the planned final radiation survey.	Decommissioning Plan Contents – must include a description of the intended final condition of the site upon decommissioning.	or RH 4.61.4 (restricted access), the plan must include analysis demonstrating that reductions in residual radioactivity necessary to comply with the provisions of RH 4.61.2 (unrestricted access) would result in net public or environmental harm or were not being made because residual levels of contamination associated with restricted conditions are ALARA, taking into account consideration of any detriments expected to potentially result from decontamination and waste disposal. Decommissioning Plan Contents – if proposing to use the criteria in RH 4.61.3 or RH 4.61.4 (restricted access), the plan must include a description of the institutional controls necessary to satisfy RH 4.61.3.2 (described below), including a description of how the controls will be enforced. Decommissioning Plan Contents – if proposing to use the criteria in RH 4.61.3 or RH 4.61.4 (restricted access), the plan must include an analysis demonstrating that if institutional controls were no longer in effect, the dose criteria of RH 4.61.3.3 (described below) will be met.	The state of the s

Comment			 	requirements are refevant and appropriate to Rocky Flats.
Type			A/L	
Citation		6 CCR 1007-1,	RH 3.16.4.6	
Requirement	COLODINO BITTERON OTT I DOD I MODELLE	COLURADO BIVISION OF LABORATORY AND RADIATION SERVICES	Decommissioning Plan will be approved by CDPHE if information therein meets RH 3.16, and RH 4.61, decommissioning is completed as soon as practicable, and health and safety of the public is adequately protected.	

Requirement	Citation	Type	Comment	
RADIATION CONTROL	-] [
Site radiation survey to establish residual contamination levels and/or confirm absence of contamination.	RH 3.16.6.2	A/L	Requirements for radiation surveys are met through the Sampling and Analysis Plans and the Integrated Monitorine Plan for Environmental Restoration	
Submittal of final survey report, units and other information – specifies, as appropriate, that gamma levels be reported at 1 meter from surface in <i>micro</i> rem/hr, removeable and fixed contamination in DPM/100 cm ² , and radioactive concentrations in pCi/L or per gram; and that instruments used be identified and instrument calibration/testing be certified.	RH 3.16.6.3	A/L	Same as RH 3.16.6.2 above.	
Criteria for license termination based on CDPHE determination that (1) radioactive materials have been properly disposed; (2) licensee has demonstrated that regulatory requirements for termination have been met; (3) the licensee has established a long-term care warranty; if required; and (4) institutional controls have been implemented to limit public doses, if required.	RH 3.16.7	A/L	Although license termination is not relevant to Rocky Flats. CDPHE believes the substantive criteria in this regulation are relevant and appropriate to determining the end point for decommissioning at Rocky Flats. Subsection (1) is met through compliance with the "offsite rule", 40 CFR 300.440; and subsections (2) and (4) are addressed in RH 4.61.2 through .4 (discussed below). Subsection (3), which is grounded in RH 3.9.5.10, is discussed above under RH 3.16.4.6.	
Additional cleanup can be required if, based on new or previously unknown information, CDPHE finds that criteria in RH 4.61 are not met and residual radioactivity remaining at RFETS could result in a significant threat to public health and safety.	RH 3.16.8	1	This standard is generally consistent with the "imminent and substantial endangerment" standard under CERCLA. Present risk of future harm (e.g., a risk of cancer due to long-term exposure) can be an "imminent" threat.	I
Radiation Protection Program – To the extent practicable, procedures and controls used shall be based on sound radiation protection principles to achieve public doses that are ALARA.		A	Planned implementation of Site approved procedures to meet 10 CFR 835, "Occupational Radiation Protection", DOE Order 5400.5, "Radiation Protection of the Public and the Environment" and the Site's IWCP will be described for remedial alternatives in the FS, and for the selected final action in the CAD/ROD.	Τ
Kadiation Protection Program – Imposes constraint on air emissions of radioactive material to the environment. "Individual member of the public likely to receive the highest dose" will not be expected to receive a TEDE greater than 10 mrem/yr from air emissions. Requires exceedance reporting and corrective action to ensure against recurrence.	RH 4.5.4	4	Listed only for completeness of this table. NESHAPS already identified as ARAR. Radionuclide NESHAPS required monitoring established at site perimeter is used to determine potential for exposure to individual member of the public.	T

Comment		Site approved procedures to meet DOE Order 5400.5, "Radiation Protection of the Public and the Environment" are based on the same dose rate limits.	Surveys will be conducted pursuant to site approved procedures to meet DOE Order 5400.5, "Radiation Protection of the Public and the Environment". Radionuclide NESHAPS required monitoring established at RFETS perimeter is used to determine potential for exposure to individual member of the public. Surface water quality will be monitored and assessed as described in the Surface Water Remedial Action Objectives Technical Memorandum dated August 20, 2002	Site approved procedures to meet DOE Order 5400.5, "Radiation Protection of the Public and the Environment" are based on the same dose rate limits. Radionuclide NESHAPS required monitoring established at RFETS perimeter is used to determine potential for exposure to individual member of the public. Surface water quality will be monitored and assessed as described in the Surface Water Remedial Action Objectives Technical Memorandum dated August 20, 2002.	Requirements for radiation surveys will be met through implementation of the Sampling and Analysis Plans and the Integrated Monitoring Plan for Environmental Restoration.	Requirements for equipment calibration will be met through implementation of the Sampling and Analysis Plans and the Integrated Monitoring Plan for Environmental Restoration.
Type		A/L	A/L	H	A/L	A
Citation		RH 4.14.1	RH 4.15.1	RH 4.15.2.1 and .2	RH 4.17.1	RH 4.17.2
Requirement	RADIATION CONTROL	Dose limits for individual members of the public – TEDE from licensed operations less than 100 mrem/yr above background, exclusive of medical exposure and exposure from disposal by sanitary sewer. Dose rate in unrestricted areas less than 2 mrem/hr.	Dose Limits for Individual Members of Public – Surveys of radiation levels in unrestricted areas and radioactive materials in effluents released to unrestricted areas shall be made to demonstrate compliance with the dose limits for individual members of the public in RH 4.14.	Dose Limits for Individual Members of Public – Provides the means to demonstrate compliance with RH 4.14: by measurement or calculation that dose does not exceed the annual limit or by demonstrating that annual average radioactive material concentration released in gaseous and liquid effluents at boundary of the unrestricted area does not exceed Appendix B, Table II, "Effluent Concentrations".	Surveys shall be made as necessary to evaluate radiation levels, concentrations of radioactive material and potential radiological hazards that could be present.	Instruments and equipment used for qualitative radiation measurements must be calibrated at intervals NTE 12 months, unless otherwise noted by regulation.



Citation Type Comment		RH 4.33 A/L Transfer to authorized recipient is met through compliance with the "offsite rule", 40 CFR 300.440. Proposals for onsite disposal of radioactive waste will be described for remedial alternatives in the FS, and will be ultimately presented in the CAD/ROD for the final action, as appropriate. RH Part 14, "Licensing Requirements for Land Disposal of Low Level Radioactive Waste" will be reviewed for relevant and appropriate requirements.	RH 4.60 A/L DOE will retain jurisdiction over certain areas of RFETSafter completion of cleanup and closure. These areas meet the definition of controlled area as defined in 10 CFR 20.1003 ("controlled area" - outside of a restricted area but inside the site boundary, access to which can be limited by DOE for any reason. DOE does not anticipate any remedial	RH 4.61.1.2 A/L Although license termination is not relevant to Rocky Flats, CDPHE believes the substantive criteria in this regulation are relevant and appropriate standards for closure of Rocky Flats. See Results of the Interagency Review of Radionuclide Soil Action Levels, September 30, 2002.	RH 4.61.1.3 A/L The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	RH 4.61.2 A/L The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.
Requirement	RADIATION CONTROL	Waste Disposal – Shall dispose only by transfer to authorized recipient, and by release in effluents within the limits of subpart RH 4.14.		ា. ឆ		been reduced to levels that are ALARA and results in TEDE to average member of the critical group that does not exceed 25 mrem/yr., including groundwater sources of drinking water.

Requirement	Citation	Type	Comment
RADIATION CONTROL			
Criteria for Restricted Use – Must demonstrate that further residual radioactivity reductions to meet Unrestricted Use:	RH 4.61.3.1	A/L	I The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.
 would result in net public or environmental harm, OR are not being made because residual levels are ALARA. 			
Criteria for Restricted Use –	RH 4.61.3.2 and .3	A/L	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.
1. Provisions made for durable, legally enforceable institutional controls that provide reasonable assurance that TEDE to average member of the critical			
group will not exceed 25 mrem/yr; AND 2. If Institutional Controls were no longer in effect, TEDE above background is ALARA and would not exceed either: 100 mrem/yr OR 500 mrem/yr, if			
demonstrated that further reductions are not technically achievable, would be prohibitively expensive or would result in net public or environmental harm.		,	and the second s
Alternate (Decommissioning) Criteria –	RH 4.61.4.1.1 through .3	AVL	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.
1. Analysis provides assurance that public health and safety would continue to be protected and unlikely TEDE would be more than 100 mrem/yr.			
2. Employment of restrictions for on site use that minimize exposures at the Site.			
3. Doses are reduced to ALARA.			

Appendix 1 Applicable or Relevant and Appropriate Requirements

 •
Comment
Type
Citation
Requirement

1/21/	"Recyclable materials" means any type of discarded or waste material that is not regulated under Section 25-8-205(1)(e), C.R.S., and can be reused, remanufactured, reclaimed, or recycled.	All remediation waste will be characterized to determine a hazardous waste classification.		Persons who generate solid wastes are required to determine if the wastes are hazardous according to 6 CCR 1007-3 Parts 261, 267, 279 [40 CFR Parts 261, 266, and 279].	Persons who accumulate hazardous waste in containers or tanks must manage the waste in a manner that protects human health and the environment.
.] [.101 to .	A	A		A/C	A
ry Act) [42 USC § 6901 et. seq.	6 CCR 1007-2 Section 1.2	6 CCR 1007-3, 261 [40 CFR 261]	6 CCR 1007-3 Part 262 (40 CFR Part 262)	.11	.34 (a)(1)(i),(ii),(iv, excluding A & B); (a)(3); (a)(4); (c)(1)
SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § 8.25.15.101 to217)]	SOLID WASTE DISPOSAL SITES AND FACILITIES • Definitions	IDENTIFICATION AND LISTING OF HAZARDOUS WASTES	GENERATOR STANDARDS	Hazardous waste determinations	Hazardous waste accumulation areas

The owner/operator of a facility must inspect for malfunctions, deteriorations, and releases, and must remedy deficiencies.

A/L

.15 (a), (c)

General Inspection Requirements

Security

Personnel must be trained.

AVC

.16 (a), (b), (c)

Personnel Training Requirements

The owner/operator of a facility must prevent unauthorized access.

A/L

.14

PREDECISIONAL REVIEW DRAFT FOR INTERAGENCY DISCUSSIONS

Comment	217)]		The owner/operator of a facility that stores, treats, or disposes of waste must verify the waste has been characterized adequately.
Туре	[·] 5-101 to -;		∢
Citation	ery Act) [42 USC § 6901 et. seq dous Waste Act (CRS § § 25-1	6 CCR 1007-3 Part 265, Subpart B [40 CFR Part 265, Subpart B]	.13 (a)
Requirement	SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	GENERAL FACILITY STANDARDS	Waste Analysis

A - Action-Specific ARAR; C - Chemical-Specific ARAR; L - Location-Specific ARAR; TBC - To Be Considered

Comment	217)]	Wastes will be managed to prevent accidental ignition or reaction of ignitable or reactive waste, or the mixing of incompatible waste.	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	Design facilities to minimize the potential for fire, explosion or release of hazardous waste.	Facilities must be equipped with specified equipment to	mitigate incidents, should they occur. Equipment must be maintained.	Employees must have access to emergency communications when managing hazardous waste.	Aisle space must be maintained to allow unobstructed	access to emergency personnel and emergency equipment. The owner/operator must make arrangements with specified local emergency personnel.	
Type	[·] 5-101 to	A/C		A/C	A/C	A/C	A/L	A	A/L	
Citation	very Act) [42 USC § 6901 et. seq irdous Waste Act (CRS § § 25-19	.17 (a), (b)	6 CCR 1007-3 Part 265, Subpart C [40 CFR 265, Subpart C]	.31	.32	.33	.34	.35	.37	
Requirement	SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	General Requirements for Ignitable, Reactive or Incompatible Wastes	PREPAREDNESS AND PREVENTION	Design and Operation of a Facility	Required Equipment	Testing and Maintenance of Equipment	Access to Communications or Alarm System	Required Aisle Space	Arrangement with Local Authorities	

A - Action-Specific ARAR; C - Chemical-Specific ARAR; L - Location-Specific ARAR; TBC - To Be Considered

Comment	217)]	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	RFETS Emergency Response Plan incorporates the substantive requirements of the Continuous Dian in the	Site's Part B Hazardous Waste Permit. Emergencies such as fire, explosion, or release of hazardous waste must be mitigated immediately.	A designated employee is responsible for coordinating emergency response actions. The emergency procedures of the kFETS Emergency Response Plan will be followed.	The substantive portions of the groundwater monitoring ARARs will be incorporated into the Integrated Monitoring Plan (IMP). The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.
Туре	[.] 5-101 to -		A/C	A	¥	A
Citation	very Act) [42 USC § 6901 et. seq irdous Waste Act (CRS § § 25-15	6 CCR 1007-3 Part 265, Subpart D [40 CFR Part 265, Subpart D]	.51 (b)	.55	.56 (a-i)	6 CCR 1007-3 Part 265, Subpart F [40 CFR Part 265, Subpart F]
Requirement	SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	CONTINGENCY PLAN AND EMERGENCY PROCEDURES	Purpose and Implementation	Emergency Coordinator	Emergency Procedures	GROUNDWATER MONITORING

Appendix 1
Applicable or Relevant and Appropriate Requirements

Comment
Type
Citation
Requirement

SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recover SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Haza	'ation and Recovery Act) [42 USC § 6901 et. seq.] [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	101 to -2	[7)]	
CLOSURE AND POST-CLOSURE	6 CCR 1007-3 Part 265, Subpart G [40 CFR Part 265, Subpart G]			
Closure Performance Standards	.111	Ą	The owner/operator must close the facility in a manner that protects human health and the environment.	
Disposal or Decontamination of Equipment, Structures, or Soils	.114	A/C	All hazardous wastes and residues of hazardous waste must be disposed or decontaminated.	
 Post-Closure Care and Use of Property 	.117	A/C	Human health and the environment must be protected after closure is complete if hazardous waste remains at the facility.	·
Air Emission Standards	.178	A/C	Hazardous wastes must be managed in accordance with AA, BB, or CC, as appropriate.	ı ——
USE AND MANAGEMENT OF CONTAINERS	6 CCR 1007-3 Part 265, Subpart I [40 CFR Part 265, Subpart I]			T
Condition of Containers	.171	¥	Containers must be maintained in good condition.	
Compatibility of Waste in Containers	.172	Ą	Wastes must be compatible with containers.	
Management of Containers	.173	A	Containers must be closed except when adding or removing waste.	
• Inspections	.174	¥	Containers must be inspected weekly.	
Air Emission Standards	.178	A/C	Hazardous wastes must be managed in accordance with AA, BB, or CC, as appropriaate.	

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	Requirement	Citation	Type	Comment	
5, 6,	SPOSAL ACT (aka: Resource Conser ARDOUS WASTE MANAGEMENT	vation and Recovery Act) [42 USC § 6901 et. seq.] [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	.] -101 to -2	[17]	
	TANK SYSTEMS	6 CCR 1007-3 Part 265, Subpart J			T
		[40 CFR Part 265, Subpart J]			
1	Design and Installation of New Tank Systems or Components	.192 (a-f)	A	Tank systems must be designed to maintain their integrity when storing or treating hazardous waste.	
•	Containment and Detection of Releases	.193 (a)(i)(2,3,4)	A	Secondary containment must be designed to contain and detect any releases from the tank system.	T
•	General Operating Requirements	.194 (a-c)	A	Tank systems must be maintained in good condition to prevent releases to the environment.	T
•	Inspections	.195 (a,b)	A	Inspections are conducted to identify any tank system integrity concern.	T
-	Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems	.196 (a-c),(e)	A	<i>a</i> c	
•	Closure and Post-Closure Care	.197 (a,b)	¥	During closure, hazardous waste and hazardous waste residues must be removed from the tank system.	
•	Special Requirements for Ignitable and Reactive Wastes	.198	A/C	Ignitable or reactive waste must be managed as specified in this section.	
•	Special Requirements for Incompatible Waste	.199	A/C	Incompatible waste must not be introduced into a tank system unless 265.17(b) is complied with.	
•	Air Emission Standards	.200 (40 CFR 264)	A/C	All hazardous waste shall be managed in accordance with AA, BB, or CC, as appropriate.	

A - Action-Specific ARAR; C - Chemical-Specific ARAR; L - Location-Specific ARAR; TBC - To Be Considered

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	Comment
	Type
	Citation
	Requirement

	Tomas	27.75	Comment
SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	very Act) [42 USC § 6901 et. seq.]		
CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS	6 CCR 1007-3 Part 264, Subpart S [40 CFR Part 264, Subpart S]		
Temporary Units	.553 (a-c)	Ą	Temporary units allow flexibility. Justification for alternative compliance must be included in the CERCLA/RFCA decision document.
Staging Piles	.554 (d)(1)(j) and (ij) .554(d)(2)(j)-(vi)	K	The volume of soil exceeding action levels should be wrapped in material that will isolate it form surrounding environmental media or in some other manner that meets the requirements of 264.554(d)(1).
MISCELLANEOUS UNITS	6CCR 1007-3 Part 264, Subpart X [40CFR Part 264, Subpart X]		
Environmental Performance Standards	.601	٧	Miscellaneous units must be designed, constructed, operated and maintained in a manner that protects groundwater, surface water, wetlands, soil and air.
Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action	.602	¥.	Miscellaneous units must be managed to ensure compliance with 264.15 (inspections), 264.33 (testing and monitoring), and 264.101 (corrective action for releases).
Post Closure Care	.603	A	Miscellaneous units that are disposal units must meet Post Closure Care Requirements.

Appendix 1 Applicable or Relevant and Appropriate Requirements

Comment	.217)]	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.		Air emission standards will be incorporated into the design of process vents associated with distillation,	Iractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations equal to or	greater than 10 ppm (by weight).	The analysis will be provided in the FS, and ultimately	in the CAD/ROD for the final action.		Air emission standards for equipment leaks must be	incorporated into the design of equipment that contains or contacts hazardous waste with organic concentrations equal to or greater than 10 ppm (by weight) according to	these sections.				
Type	ų.] 5-101 to			∀ 4	¥	BMP				A	Ą	₹	A	¥	Ą	
Citation	very Act) [42 USC § 6901 et. sec irdous Waste Act (CRS § § 25-1	6 CCR 1007-3 Part 264,	[40 CFR Part 264, Subpart AA]	.1032	.1034	.1035	6 CCR 1007-3 Part 264,	Subpart BB	[40 CFR Part 264,	.1052	.1053	.1054	.1054	.1056	.1057	
Requirement	SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	AIR EMISSION STANDARDS FOR PROCESS VENTS		Standards: Process Vents Standards: Closed-Vent Systems and Control Devices	Test Methods and Procedures	Recordkeeping	AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS			Standards: Pumps in Light Liquid service	Standards: Compressors	Standards: Pressure Relief Devices in Gas/Vapor Service	Standards: Sampling Connecting Systems	Standards: Open-ended Valves or Lines	Standards: Valves in Gas/Vapor or Light Liquid Service	

Applicable or Relevant and Appropriate Requirements

Comment							BMP	The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	Air emission standards must be incorporated into the design of tanks, surface impoundments, and container facilities that store or treat hazardous waste with organic concentrations equal to or greater than 10 ppm (by weight).
Type	A	≺	₹	4	4	∢	A		44444
Citation	.1058	.1059	.1060	.1061	.1062	.1063	.1064	6 CCR 1007-3 Part 265, Subpart CC [40 CFR Part 265, Subpart CC]	.1082 .1083 .1084 .1086 .1087
Requirement	Standards: Pumps and Valves in Heavy Liquid Service, Flanges, and Other Connectors	Standards: Delay of Repair	Standards: Closed Vent Systems and Control Devices	 Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Percentage of Valves Allowed to Leak 	 Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Skip Period leak Detection and Repair 	Test Methods and Procedures	Recordkeeping Requirements	AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS	 Standards: General Waste Determination Procedures Standards: Tanks Standards: Containers Standards: Closed-Vent Systems and Control Devices Inspection and Monitoring Requirements

A - Action-Specific ARAR; C - Chemical-Specific ARAR; L - Location-Specific ARAR; TBC - To Be Considered

Appendix 1 Applicable or Relevant and Appropriate Requirements

Requirement	Citation	Type	Comment	
SOLID WASTE DISPOSAL ACT (aka: Resource Conservation and Recovery Act) [42 USC § 6901 et. seq.] SUBTITLE C: HAZARDOUS WASTE MANAGEMENT [Colorado Hazardous Waste Act (CRS § § 25-15-101 to -217)]	rery Act) [42 USC § 6901 et. seq.	.] 5-101 to -2	[2]	
CONTAINMENT BUILDINGS	6 CCR 1007-3 Part 265, Subpart DD [40 CFR Part 265, Subpart DD]		The analysis will be provided in the FS, and ultimately in the CAD/ROD for the final action.	T
Design and Operating Standards	.1101(a); (b); (c)[1, 3 (excluding administrative elements of i-iii), and 4]; (d); (e)	Y	Containment buildings must be designed and operated to prevent releases to the environment.	
Closure and Post-Closure Care				
LAND DISPOSAL RESTRICTIONS	6 CCR 1007-3 Part 268 [40 CFR Part 268]			1
 Dilution Prohibited as a Substitute for Treatment 	£;	Ą	LDR determinations must be completed for hazardous wastes generated.	
LDR Determination (Determination if Hazardous Waste Meets the LDR Treatment Standards)	7.	A	Land disposal restrictions apply primarily to the off-site disposal actions proposed as part of the remedial	
Special Rules for Wastes that Exhibit a Characteristic	.9 (a-c)	Ą	activity.	
SOIL REMEDIATION POLICY DOCUMENT				1
Colorado Soil Remediation Objectives Policy Document	Published by CDPHE in December, 1997	TBC	Cost effective, site-specific risk-based approach to establishing soil remediation objectives. Would be considered in manner compatible with ALF and RFCA Attachment 10.	

Comment
Type
Citation
Requirement

	Citation	1706	Comment
COLORADO REVISED STATITTES (CRS) TITLE 8 ARTICLE 30 PARTS 7 AND 3-TITLE 18 APPLICATE 35 PARTS	PTS 7 AND 3.TITLE 18 ABITICE	10000	, He
CONTRACTOR OF THE CANTICLE TO LAI	NIS / AMD 2;111 LE 18 AKIICI	LE 25 PAI	KI 1
TOXIC SUBSTANCES CONTROL ACT (TSCA) [15 USC 2601 et seq.]	JSC 2601 et seq.] Relating to PCBs		
PCB USE AUTHORIZATIONS	40 CFR 761.30	A	Lists authorized uses and use restrictions for PCBs.
MARKING REQUIREMENTS	40 CFR 761.40 and .45	A	Labeling of PCBs and PCB storage areas.
DISPOSAL REQUIREMENTS		A	
A == 1; == 1			General PCB Disnosal Requirements
Applicability Disposal Requirements	761.50		Disposal Requirements.
PCB Remediation Waste	761.61		Concrete painted with PCB-based paints may be left in
PCB Bulk Product Waste	761.62		place in the basements of demolished building, and
			courtee future containing rep-based paints may be stored onsite and used as backfill, pursuant to the letter from Kerrigan Clough to Joe Legare. Approval of Risk.
 Disposal of R&D and Chemical Analyses wastes 	761.64		Based Approach for Polychlorinated Biphenyls (PCBs)-Based Painted Concrete, November 2001.
STORAGE REQUIREMENTS FOR PCBs	40 CFR 761.65	A	The analysis will be provided in the FS, and ultimately in
Facility Criteria			the CAD/ROD for the final action.
Temporary Storage			
• Inspections			
Container Specifications			
PCB radioactive waste			
Marking			
Laboratory Sample Exemption from Manifesting			

Comment		Institutionalizes EPA approval of PCB activities under TSCA when activities are being conducted under another waste management permit, or other decision document issued by EPA or pursuant to a State PCB waste	management program.			40 CFR 761 Subpart G is entitled PCB Spill Cleanup	Policy and thus many of the sections, specifically for spills after May 4, 1987 are "To Be Considered."	Characterization security	remediation waste.	Not ARAR unless conducting a self-implementing cleanup of PCB remediation waste.		Applicable procedures when using alternatives to required analytical methodology.	Characterization requirements for PCB bulk product waste and PCB remediation waste when characterization for disposal is required.		Referenced procedure from 761.79.
Type		A	A			TBC		4	ζ.	A	A	A	A		A
Citation	elating to PCBs	40 CFR 761.77	40 CFR 761.79			40 CFR Subpart G		40 CFR Subpart N	T	40 CFR Subpart O	40 CFR Subpart P	40 CFR Subpart Q	40 CFR Subpart R		40 CFR Subpart S
Requirement	TOXIC SUBSTANCES CONTROL ACT (TSCA) [15 USC 2601 et seq.] Relating to PCBs		DECONTAMINATION STANDARDS AND PROCEDURES	Self-Implementing Decontamination	Measurement-Based Decontamination Description	FCB SFILL CLEANUP	Requirements for PCB Spill Cleanup	Cleanup site characterization sampling for PCB remediation waste	Sampling to verify completion of self implement:	disposal of bulk PCB remediation waste and porous surfaces	or off-site disposal under 761.61(a)(6) and determination under 761.79(b(3)	for non-liquid PCB remediation waste samples	Sampling non-liquid, non-metal PCB bulk product waste for purposes of characterization for PCB disposal in accordance with 761.62, and sampling PCB remediation waste destined for off-site disposal, in accordance with 761.61	Double wash/rinse method for decontaminating non name and	יייי ביייייייייייייייייייייייייייייייי

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